

WHAT IS CLAIMED IS:

1. A method of performing a test on a formation intersected by a
5 wellbore, the method comprising the steps of:

installing a test apparatus in the wellbore, the test apparatus including a
fluid barrier reciprocably displaceable within the apparatus, the barrier having
first and second opposite sides;

flowing fluid from the formation into the apparatus on the first side of the
10 barrier, the barrier displacing in a first direction in the apparatus as the
formation fluid flows into the apparatus; and

applying pressure to the apparatus on the second side of the barrier,
thereby displacing the barrier in a second direction opposite to the first direction
in the apparatus and forcing the formation fluid to flow back into the formation
15 from which the fluid originated.

2. The method according to Claim 1, wherein in the installing step, the
apparatus includes a tubular string extending to a remote location, and wherein
the barrier is axially reciprocably received in the string.

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3. The method according to Claim 2, wherein in the applying step, pressure is applied to the string at the earth's surface to displace the barrier downwardly.

5 4. The method according to Claim 1, wherein in the installing step, the barrier is a plug sealingly received in a bore of the apparatus.

5. The method according to Claim 1, further comprising the step of closing a valve of the apparatus in response to the barrier displacing in the first
10 direction in the flowing step.

6. The method according to Claim 5, further comprising the step of opening the valve in response to the pressure applying step.

15 7. The method according to Claim 5, wherein in the closing step, the valve prevents flow through a flow passage in which the barrier is reciprocally received.

8. The method according to Claim 7, wherein in the installing step, the
20 apparatus includes a tubular string extending to a remote location, and the flow passage is in fluid communication with an interior of the tubular string.

9. The method according to Claim 8, wherein in the applying step, pressure is applied to the interior of the tubular string, the valve opens in response to the pressure, and the pressure is communicated through the open valve from the tubular string interior to the barrier second side.

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10. The method according to Claim 1, further comprising the step of setting at least one packer of the apparatus in response to displacement of the barrier in the second direction prior to the flowing step.

10 11. The method according to Claim 10, wherein the setting step is performed further in response to applying pressure to the apparatus on the second side of the barrier, which pressure applying step causes the barrier to displace in the second direction.

15 12. The method according to Claim 11, wherein in the installing step, the apparatus includes a tubular string extending to a remote location, and wherein in the setting step, pressure is applied to the tubular string at the remote location to displace the barrier in the second direction.

20 13. The method according to Claim 1, further comprising the step of opening a waste chamber of the apparatus prior to flowing the formation fluid

into the apparatus, opening of the waste chamber permitting wellbore fluid to flow into the waste chamber.

14. The method according to Claim 13, wherein the waste chamber
5 opening step is performed in response to pressure applied to an annulus formed between the apparatus and the wellbore.

15. The method according to Claim 13, further comprising the step of setting at least one packer of the apparatus in the wellbore prior to the flowing
10 step, and wherein the waste chamber opening step is performed after the setting step.

16. The method according to Claim 13, wherein there are multiple waste chambers, and wherein the waste chamber opening step further comprises
15 sequentially and selectively opening each of the waste chambers.

17. The method according to Claim 16, wherein ^{fluid}there are multiple formations intersected by the wellbore, wherein the ^{formation}flowing and ^{pressure}applying steps are performed for each of multiple selected ones of the formations, and wherein
20 the waste chamber opening step is performed for each of the selected formations, each of the waste chambers being opened for a corresponding one of the selected formations prior to the respective flowing step.

18. The method according to Claim 1, wherein there are multiple formations intersected by the wellbore, wherein the ^{formation fluid} flowing and applying steps are performed for each of multiple selected ones of the formations. ^{pressure}

19. A system for performing a test on a formation intersected by a wellbore, the system comprising:

a fluid barrier reciprocably displaceable within an apparatus into which fluid from the formation is flowed, the barrier displacing when the formation
5 fluid is flowed between the apparatus and the formation; and

a valve in the apparatus, the valve being operated in response to displacement of the barrier.

20. The system according to Claim 19, wherein the valve operates in
10 response to displacement of the barrier in a first direction, and wherein the barrier displaces in the first direction when formation fluid is flowed into the apparatus.

21. The system according to Claim 20, wherein the valve closes in
15 response to displacement of the barrier in the first direction.

22. The system according to Claim 20, wherein the valve operates when the barrier displaces in a second direction opposite to the first direction, and wherein the barrier displaces in the second direction when formation fluid is
20 flowed out of the apparatus.

23. The system according to Claim 19, wherein the apparatus includes a tubular string positioned in the wellbore, the tubular string having an interior in fluid communication with a flow passage extending through the valve.

5 24. The system according to Claim 23, wherein the barrier displaces in the first direction, thereby closing the valve and preventing flow through the flow passage, when pressure in the tubular string interior is less than pressure in the formation, and the barrier displaces in the second direction and the valve opens, thereby permitting flow through the flow passage, when pressure in the tubular
10 string interior is greater than pressure in the formation.

25. A system for performing a test on a formation intersected by a wellbore, the system comprising:

at least one packer interconnected as part of ^{a drill string} [an] apparatus positioned in the wellbore;

5 a fluid barrier reciprocally displaceable within the apparatus when fluid is flowed between the apparatus and the formation; and

^{control} a module interconnected to the packer, the module alternately permitting and preventing setting and unsetting of the packer in response to reciprocal displacements of the barrier.

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26. The system according to Claim 25, wherein the module responds to reciprocal displacements of the barrier in the following sequence:

displacement of the barrier in a first direction causes the module to permit setting of the packer;

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displacement of the barrier in a second direction opposite to the first direction causes the module to prevent unsetting of the packer;

displacement of the barrier in the first direction causes the module to permit unsetting of the packer when the barrier next displaces in the second direction; and

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displacement of the barrier in the second direction causes the module to permit unsetting of the packer.

27. The system according to Claim 26, wherein the module is configured to permit repetition of the sequence.

28. A system for performing a test on a formation intersected by a wellbore, the system comprising:

a formation testing apparatus including at least one waste chamber, and at least one packer configured for isolating the formation when set in the wellbore,

5 the waste chamber being opened in response to pressure in an annulus formed between the apparatus and the wellbore after the packer is set.

29. The system according to Claim 28, wherein the waste chamber receives therein wellbore fluid from the annulus when the waste chamber is
10 opened.

30. The system according to Claim 28, wherein there are multiple waste chambers, and wherein there are multiple formations intersected by the wellbore, and further comprising a module of the apparatus which opens each of the waste
15 chambers in sequence prior to a corresponding one of the formations being tested.